



# Activities Europe (ACTEUR)

- **Inspection** of U.S. flagged vessels operating internationally and of foreign ships carrying oil, gas, chemicals or U.S. passengers to/from the U.S.
- **Investigation** of marine casualties involving U.S. vessels and mariners
- **International Port Security Program** seeks to reduce risk to U.S. maritime interests, including U.S. ports and ships, and to secure maritime trade globally working with the Department of State country teams and host nation maritime partners



# Area of Responsibility (AOR)



ACTEUR IPS Program members continuously engage in 58 littoral states throughout Africa, Europe, and the Middle East with 100+ annual missions within the AOR



Inspectors and Investigators travel where they are needed within the AOR—west to Greenland, south to South Africa, and east to Pakistan



# U.S. Ballast Water Regulations





# Complex Challenge

- Invasion biology
- Salinity & Turbidity
- Naval engineering
- Fleet operations and management
- Compliance strategies
- Maintenance and Repairs
- Port operations and facilities
- Installation requirements
- Operational requirements
- Volume/frequency of discharge
- Regulations leading technology
- Cost





# You should know.....



- Coast Guard is in compliance mode
- Best option: CG Type Approved System
- Vessels need a contingency plan
- Invasive species impact both environment & our economy





# BW Regs: 2012 to now.....



- 5 CG-approved Independent Labs
- Extensions to compliance dates: 12,000+
- New MSIB in March, cinching down extensions
- 6 CG Type Approved Systems
- More systems coming on the way
- Industry feedback is shaping implementation
- More CG guidance is coming



# USCG v IMO

- U.S. is not party to the IMO Convention. There are no plans to change our requirements or implementation dates due to changes to the IMO Convention.
- USCG Regulations are not the same as the IMO Implementation.
- Discharge standards are similar but not exactly the same – limits on Viable (IMO) v. Living (USCG) organisms
- Differences between IMO and U.S. type approval testing



# U.S. Ballast Water Program



- Regulation - 33 Code Federal Regulations Part 151
  - effective June 2012
- Options for Compliance:
  - a) Alternate Management Systems (AMS)
  - b) Extensions to Compliance Dates
  - c) US type approved BWMS
- USCG compared to IMO Type Approval
- Compliance and Enforcement
- Next Steps



# Options for Compliance



1. No BW Discharge



2. Coast Guard Approved Ballast Water Management System



3. Discharge to Facility Onshore or to Another Vessel for Purpose of Treatment



4. Use only water from a U.S. Public Water System



## Two Temporary Compliance Alternatives



1. Alternate Management System (AMS) – Temporary Designation for up to 5 years



2. Receive an Extension to Vessel's Compliance Date - extension period will vary depending upon TA system availability





# Temporary Compliance: Alternate Management Systems



- A BWMS is accepted for use as an AMS based on its type approval by a foreign administration.
- AMS may be used for 5 years after expiration of the vessel's extended compliance date
- Vessels with AMS can comply and must operate the AMS once their original/extended compliance date has passed.



# Temporary Compliance: Alternate Management Systems



- More than 60 systems are now accepted as AMS for use in U.S. waters.
- <https://homeport.uscg.mil/>  
Select: “Environmental” Mission;  
Ballast Water Management Program; then  
**Alternate Management Systems (AMS)**



# Temporary Compliance: Extensions



- Updated Guidance for Extension Applications  
Marine Safety Information Bulletin 03-17  
(March 6, 2017)

- Application instructions online:

<https://homeport.uscg.mil/>

Select: “Environmental” Mission;

Ballast Water Management Program; then

**Regulations and Policy Documents**



# Temporary Compliance Extensions



- No longer align with scheduled dry docking dates.
- Extensions will grant:
  - 6 months to conduct an analysis of BWMS.
  - Up to 30 months to accommodate installation plans.



# Type Approved BWTS

- Type Approval Certificates issued for:
  - Optimarin OBS/OBS Ex
  - Alfa Laval PureBallast 3
  - OceanSaver BWTS MKII
  - Sunrui BalClor
  - Ecochlor BWTS
  - ERMA FIRST BWTS FIT
- Additional manufacturers have submitted Letters of Intent stating they intend to apply



# Type Approved BWMS Details



Company	Method	Flow Rate (m <sup>3</sup> /hr)
TeamTec OceanSaver AS	Electro-chlorination	200 – 7,200
Alfa Laval Tumba AB	Ultraviolet	85 – 3,000
Optimarin AS	Ultraviolet	167 – 3000
Sunrui Marine Environmental Engineering, Co.	Electro-chlorination	170 – 8,500
EcoChlor , Inc.	Chemical injection	500 – 16,200
Erma First ESK Engineering Solutions SA	Electro-chlorination	90 – 3,740
<i>Samsung Heavy Industries , Co. (Applied)</i>	<i>Electro-chlorination</i>	<i>250 – 10,000</i>



# Typical Ballast Pumping Rates



Vessel Type	Flow Rate (m <sup>3</sup> /hr)
Tanker	5,000 – 20,000
Float-on, float-off	10,000 – 15,000
Ore	10,000
Liquefied-gas	5,000 – 10,000
Dry bulk	5,000 – 10,000
Heavy lift	5,000
Barge-carrying cargo	1,000 – 2,000
Roll-on, roll-off	1,000 – 2,000
General cargo	1,000 – 2,000



# Plug-N-Play Myth

- Ship owners/operators want to :
  - Buy, install, use: Plug and Play
- Frustration with installed BWMS
  - Source water is not right (salinity, murky, etc.)
  - Replacement parts, repair, training issues
- Concerns prior to investing
- BWMS is a cargo management system



# Type Approval Review Process



Six-step application review process:

1. Application screening
2. Engineering review
3. Land-based test review
4. Shipboard test review
5. Component test review
6. Scaling review



# How Type Approval Works

Per 46 CFR 162, an Independent Laboratory (IL) will evaluate:

- a.) Test Data & Information from type approval testing by a foreign administration. Additional testing and evaluation by an IL may be required.
- b.) Test Data & Information produced and submitted by an IL.



# Independent Lab Program



USCG is working with ILs to ensure quality results, including regular teleconferences to discuss technical issues, certification reviews, and laboratory oversight. The IL program focuses on:

- Consistency in testing
- Best practices
- Lessons learned



# Accepted Independent Labs

- NSF International (Ann Arbor, MI)
- Det Norske Veritas-Germanischer Lloyd (DNV-GL; Norway)
- Korean Register of Shipping (ROK)
- Control Union Certifications (Netherlands)
- Lloyd's Register EMEA (UK)

Coast Guard is in contact with other test organizations interested in acceptance as IL for BWMS testing.



# Type Approval Process

## USCG v IMO



- U.S. is currently not party to the IMO Convention. There are no plans to change our regulations due to changes to the IMO Convention.
- USCG Regulations are not the same as the IMO Implementation.
- Discharge standards are similar but not exactly the same - Viable (IMO) v. Living (USCG) organisms
- Differences between IMO and U.S. type approval testing



# Type Approval Similarities



1. Readiness evaluation
2. Land-based testing
3. Shipboard testing
4. Environmental/  
Component testing
5. Treatment system scaling





# Technical Differences



1. Discharge Standard
2. Shipboard Testing
3. Hold Time
4. Component /  
Environmental Testing





# Summary of Technical Differences



	IMO G8	USCG
Discharge Standard	< 10 Viable Organisms	< 10 Living Organisms
Shipboard Testing	3 Test Cycles	5 Test Cycles
Hold Time	> 5 Days	> 24 Hours
Component / Environmental Testing	2 Hour Endurance Test	4 Hour Endurance Test



# Compliance and Enforcement

- Regular vessel inspections include ballast water management (BWM)
  - BWM exams on foreign vessels: 9,300/year
- Follow existing compliance approach
  - Documentation, Equipment Condition and Operation, & Crew knowledge
- Deficiencies issued since 2012 Final Rule: ~600
- Enforcement actions: ~20 (warnings to \$5,500 fines)



# Compliance and Enforcement

- Lessons Learned:
  - Non-compliance is costly
  - Diverted voyages, modified cargo ops, pilot fees, launch fee, fuel fees, lost income, penalties, etc
  - \$35,000 to \$150,000 for one port
  - Civil & criminal penalties



# What do you do if it breaks?

- Report immediately to the cognizant COTP
- Present your plan
- COTP may allow other methods in regulations
- A inoperable BWMS needs to be fixed
- Might require voyage deviation for BWE



# Next Steps



- USCG R&D - Sampling and analysis method and tools in development
- New NVIC for field units and industry expected in late 2017.
- Address challenges to type approval
  - Modification of system components (filters)
  - Scaling (size, flow rates)



# Resources

## ■ Coast Guard Internet Portal

- <https://homeport.uscg.mil/> , under “Environmental” mission tab

## ■ Code of Federal Regulations

- 33 CFR Part 151 – Ballast Water Management
- 46 CFR Subpart 162.060 – Type Approval

<https://www.ecfr.gov/>



# USCG Program Offices

- Operating & Environmental Standards (OES)
  - Regulation & policy program manager
- Design & Engineering Standards (ENG)
  - 3<sup>rd</sup> Party Independent Lab manager
- Marine Safety Center (MSC)
  - Type approval manager
- Commercial Vessel Compliance (CVC)
  - Compliance manager



# Questions?



## Points of Contact:

Vessel Compliance: [cgcvc@uscg.mil](mailto:cgcvc@uscg.mil)

Type Approval: [msc@uscg.mil](mailto:msc@uscg.mil)

AMS/Extensions:  
[environmental\\_standards@uscg.mil](mailto:environmental_standards@uscg.mil)